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Chelmsford Public Schools Administrative Offices

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CURRICULUM AND INSTRUCTION

June 8, 2000

BERNARD DINATALE
EXECUTIVE DIRECTOR OF INFORMATION
AND TECHNOLOGY

RECEIVED

JUN - 9 2000

FCC MAIL ROOM

Federal Communications Commission
Office of the Secretary
445 12th Street SW, Room TW-A325
Washington, DC 20554

In the matter of: Request for Review by the Chelmsford Public Schools of Decision of
Universal Service Administrator

Reference: FCC Docket Nos. 97-21 and 96-45

Re: Billed Entity Number: 120395
Application Number: 121771

Funding Request Number: 175176
Funding Year: 1999-2000

Dear Sirs:

This letter serves as an official appeal to the Universal Service Administrator's ruling on the appeal of the above referenced application for funding of the Telecenter 21 system.

The Telecenter 21 is a PBX telephone system, eligible under Paragraph 458-459 in the Eligible Services List, as can be shown in the attached specification sheets. All peripheral equipment listed is needed to expand the PBX beyond a minimum number of users. The confusion maybe that the already existing intercom system can be used as part of the telephone system. We did not include any costs for the intercom system.

We are at a loss to understand why the Telecenter 21 is not considered a PBX.

Sincerely,

Bernard DiNatale
Executive Director of
Information and Technology

Enclosures

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CHELMSFORD PUBLIC SCHOOLS
CHELMSFORD, MASSACHUSETTS

RECEIVED

JUN - 9 2000

FCC MAIL ROOM

TO: MATT MCGOURTY - SLC
RE: FORM 471 APPLICATION NUMBER 121771
DATE: July 7, 1999

Attached is a copy of the purchase order for the new telephone system for seven (7) buildings.

The breakdown for each building is as follows:

	Telephone Cost	PBX Cost	Labor
Byam	\$ 5,007	\$ 21,754	\$ 7,024
Harrington	5,007	21,754	7,249
South Row	2,874	20,216	6,649
Westlands	3,270	19,364	6,874
McCarthy	9,541	30,999	10,474
High School	12,159	53,902	8,049
TOTAL	\$ 37,858	\$ 167,989	\$ 46,094

If you have any further questions, please call Marilyn Ryan at (978) 251-5100, extension 28.

SIGNET INTEGRATED COMMUNICATION SYSTEM (RAULAND) FEATURES:

Based upon our recommendation, we feel the Rauland-Borg integrated communication system solution will benefit the Chelmsford school district by offering the following features:

Enhanced 911

- Automatic Location Identification
- Individual School Name
- Street Address and City
- Building Unit Identifier
- Call Back Telephone Number
- Main Entry Wall Display – '911 called from 3454, go to second floor'
- Disconnected calls are automatically re-routed back to that room/extension

Integrated Intercom/Public Address Functions

- Always An Answer – automatically routes important communications to the free device when the classroom telephone or speaker is busy
- Two-Way Group Instruction Via the Classroom Speaker
- Emergency/Normal Call-Ins
- Privacy Tone Speaker
- Intercom/Handset Conversion
- Programmable Buttons on Classroom Telephones for Emergency Calls, Nurse, etc.
- Page Exclusion – automatically mutes speakers associated with the telephone to avoid feedback
- Telephone/Toll Restriction
- Built-in diagnostics for remote troubleshooting and maintenance
- Multiple memory configurations enable the system to operate differently during periods of the day and/or week (ex: day care program, night classes, etc.)
- Off Premise Security Monitoring (can listen in on individual speakers to hear intruders)
- Personal Identification Numbers allow selected personnel to perform functions from restricted telephones (paging announcements)
- Emergency "All Call"

- Hands Free Communication
 - Night Service – night ringing through public address speakers
 - Call Forwarding
 - Conference Calling
 - Personal and System Wide Repertory Dialing
 - Student Phone – allows students controlled access to outside lines (will limit the length of call and the number of times that number is dialed)
-



FEATURES

- Provides Sixteen (16) Simultaneous, Global Telephone Conversation Paths
- Also Provides Up to Three (3) Simultaneous, Global, Amplified Voice Audio Channels
- Includes Priority Paging Microphone
- Multiple Channel Audio Program Distribution
- Built-In Full Feature Master Clock
- Non-Volatile User-Configurable Memory
- Time-Based System Reconfiguration
- Advanced Microcomputer Design
- Built-In Diagnostics
- Completely Self-Contained Electronics

SPECIFICATIONS

Power Required: 105 - 130V AC @ 3.0 amps

Power Supply Output: 12V DC @ 4.0 amps, 5V DC @ 2.0 amps

Environmental Parameters:

Temperature: 40°F (0°C) to 90°F (32°C)

Relative Humidity: 0 to 85%

System Capacity:

Telephone Ports: Twelve (12) (telephones, trunks, or both)

Room Stations: 256 (speakers, call switches, telephones - in any combination)

Audio Channels:

Telephone Linkage: Sixteen (16) global telephone links

Intercom/Paging Channels: One (1) standard, expandable to three (3) global channels

Intercom Amplifier:

System Capacity: One (1) amplifier standard, expandable to three (3) amplifiers

Power Output: Twelve (12) watts @ 25V rms

Controls: VOX or PTT

Audio Inputs: Four (4) line level inputs (audio program sources)
One (1) microphone input (Lo-Z)

Dial Registers: Two (2) registers standard, expandable to six (6) registers

Master Clock Capacity: 255 events

Eight (8) Zone Relays
Four (4) Schedules
Sixteen (16) Holidays
Eight (8) Time Zones
(independent of paging zones)
Corrects all Rauland digital and analog secondary clocks

Wiring Requirements:

Administrative Telephones: Twisted pair
Digital Display (Data): Shielded pair

Classrooms: TC2114 - Four (4) conductors (two (2) twisted pairs or three (3) conductor shielded cables)
TC2113 - One (1) shielded pair

pair

(Includes speaker, call switches, and telephone)

Field Wire Terminations: All field wiring terminates on 25-pair Telco connectors

Mounting: Mounts in EIA standard 19" equipment rack or with WM2100 Wall-Mounting Kit; mounts directly to wall

Additional Data: Accommodates 2, 3 or 4 digit dialing
Twelve (12) individually addressable digital displays
Two (2) RS-232C serial data ports
System configuration/programming
System diagnostics (on or off site)
System activity logging

Dimensions: 19" (48.3 cm) wide, 14" (35.6 cm) high, 11" (27.9 cm) deep

Shipping Weight: 20 lbs. (9.1 kg)

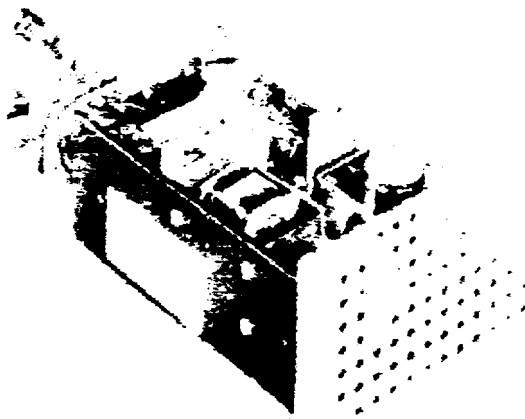
Associated Equipment: TC2105 - Expander Chassis
TC2106 - Expander Power Supply
TC2113/TC2114 - Station Line Cards
TC2120 - Relay Line Card
TC2150 - Master Station Module
TC2161 - Intercom Amplifier
TC4180 Series - Trunk Interface Equipment
TC4190 - Dual-Dial Register Module
WM2100 - Wall-Mount Adapter Kit
Rauland DAX and FAX Series Amplifiers
Rauland Fireplex™ Fire Alarm System
Rauland Personal Alert System

Specifications subject to change without notice.

RAULAND-BORG CORPORATION

3450 West Oakton Street, Skokie, Illinois 60076-2958 • Tel: (847) 679-0900 • FAX: (847) 679-0625

In Canada: RAULAND-BORG (CANADA) INC. • 6535 Millcreek Drive, Unit 5, Mississauga, Ontario, Canada L5N 2M2 • (905) 821-2225 • FAX: (905) 821-8325



FEATURES

- Provides Additional Power for Applications Requiring Multiple Intercom Amplifiers
- Provides Solid-State Reliability
- Mounts Conveniently in TC2100 Central Switching Exchange
- Modular Connectors for Easy Installation

SPECIFICATIONS

Output Voltage: 12V DC

Output Current: 6.0 amps

Power Requirements: 105V AC to 130V AC @ 3.0 amps

Dimensions: 6" (15.2 cm) wide, 3" (7.6 cm) high,
9" (22.9 cm) deep

Mounting: Dedicated Slot in TC2100 Central Switching Exchange

Shipping Weight : 4 lbs. (1.8 kg)

Associated Equipment: TC2100 Central Switching Exchange
TC2161 Intercom Amplifier

DESCRIPTION

The Rauland TC2106 Expander Power Supply provides additional DC power for Telecenter® System 21 applications requiring more than one TC2161 Intercom Amplifier.

The TC2106 provides 12V DC @ 6.0 amps. The

output voltage is regulated to ensure that there will be no hum on the intercom audio.

The TC2106 mounts in an empty slot provided in the TC2100 Central Switching Exchange. Modular connectors make for quick, convenient installation.

Specifications subject to change without notice.

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FEATURES

- Accommodates Up to 176 Room Stations on Up to Eleven (11) Station Line Cards (TC2113 or TC2114)
- Provides Secure Module Support
- Provides Convenient Front Loading of TC2113 or TC2114 Station Line Cards
- Mounts in Standard 19" Equipment Rack or Can Be Wall-Mounted

SPECIFICATIONS

Capacity: Eleven (11) Station Line Cards (TC2113 or TC2114). TC2120 Relay Line Cards may be attached to each Station Line Card

Dimensions: 19" (48.3 cm) wide, 14" (35.6 cm) high, 11" (27.9 cm) deep

Mounting: Mounts in EIA standard 19" equipment rack or with WM2100 wall-mounting kit, mounts directly to wall

Shipping Weight: 13.5 lbs. (6.2 kg)

Associated Equipment: TC2100 - Central Switching Exchange
TC2106 - Expander Power Supply
TC2113/TC2114 - Station Line Cards
TC2120 - Relay Line Card
WM2100 - Wall-Mount Adaptor Kit

DESCRIPTION

The Rauland TC2105 SLC Expander Chassis provides mounting for up to eleven (11) TC2113 or TC2114 Station Line Cards (SLC's) in a Telecenter® System 21. The unit is required when the SLC capacity of the TC2100 (5 cards/80 classrooms) is exceeded. The SLC (TC2113 or TC2114) will also accommodate the TC2120 Relay Line Card for each of the eleven SLC cards. No additional space is required in the mounting chassis.

The TC2105 SLC Expander Chassis provides secure mounting support for the Station Line Cards. The

modules are conveniently inserted and removed from the front of the unit. This makes for easy inspection and/or servicing of any individual module without requiring the removal of other modules or disruption of their operation.

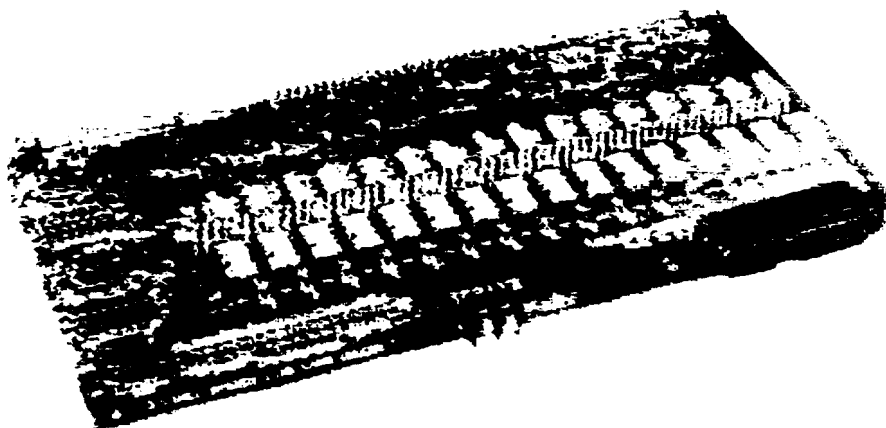
The TC2105 may be mounted in an EIA standard 19" equipment rack or it may be mounted directly on a wall or backplane using the WM2100 Wall-Mount Adaptor Kit.

Specifications subject to change without notice.

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TC2105



FEATURES

- Provides Switching and Termination for 16 Room Stations
- Supports Speakers, Call Switches and a Telephone for Each Room Station
- Mounts Conveniently in TC2100 Central Switching Exchange or in TC2105 SLC Expander Chassis
- Equipped with a Standard 25-Pair Telco Connector for all Field Wire Terminations
- Provides Mounting for TC2120 Relay Line Card
- Provides Access to 16 Global Telephone Communication Paths
- Provides Access to All Audio channels When Equipped with TC2120 Relay Line Card

SPECIFICATIONS

Capacity: Sixteen (16) lines (room stations)
Maximum Audio Load: Single Port: 10 watt
All Ports: 25 watts
Field Wiring: 3 Conductors Each Position: Two conductor shielded cable minimum
Dimensions: 12.75" (32.4 cm) wide, 7" (17.8 cm) deep
Mounting: TC2100 Central Switching Exchange or TC2105 SLC Expander Chassis

Shipping Weight: 1.0 lbs. (0.5 kg)
Associated Equipment: TC2100—Central Switching Exchange
 TC2105—SLC Expander Chassis
 TC2120—Relay Line Card
 CRT4—Staff Telephone
 TC4312—Single Line Telephone

NOTE: THE TC2114 AND TC2113 STATION LINE CARDS MAY NOT BE MIXED IN A SINGLE SYSTEM.

DESCRIPTION

The TC2113 Station Line Card - Three (3) Conductor (SLC3) provides termination and switching for sixteen (16) room stations in a Telecenter® System 21 communications system. Each station can consist of; a speaker, call switches (Normal, Emergency, Privacy), and audio program select in any combination, and a staff telephone (dialing or non-dialing).

If multi-channel audio is required, the TC2120 Relay Line Card may be added. The TC2120 expands the audio channel capacity of the card from one to three.

The TC2113 includes a 25-pair Telco connector for all field wiring. This is designed for use with standard telephone punch blocks on distribution frames. Conveniently located on the rear of the card, the connector allows for easy removal and insertion of the module for inspection and servicing.

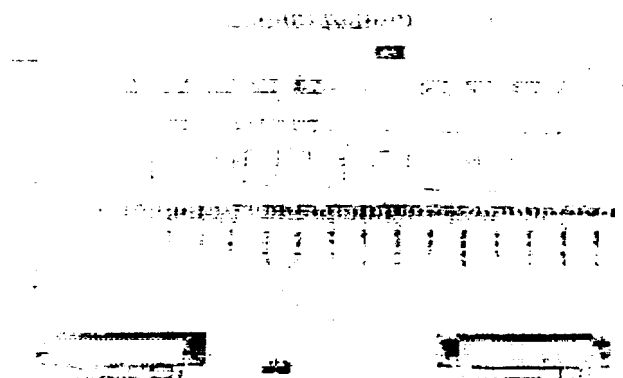
The TC2113 mounts in vertical slots in the TC2100 Central Switching Exchange or in the TC2105 SLC Expander Chassis. Up to five (5) TC2113's may be mounted in the TC2100. An additional eleven (11) TC2113's may be mounted in the TC2105.

Specifications subject to change without notice.

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FEATURES

- Provides Switching and Termination for 16 Room Stations
- Supports Speakers, Call Switches and a Telephone for Each Room Station
- Mounts Conveniently in TC2100 Central Switching Exchange or in TC2105 SLC Expander Chassis
- Equipped with a Standard 25-Pair Telco Connector for all Field Wire Terminations
- Provides Mounting for TC2120 Relay Line Card
- Provides Access to 16 Global Telephone Communication Paths
- Provides Access to All Audio channels When Equipped with TC2120 Relay Line Card

SPECIFICATIONS

Capacity: Sixteen (16) lines (room stations)

Maximum Audio Load: Single Port: 10 watt
All Ports: 25 watts

Field Wiring: 4 Conductors Each Position: (Two [2] twisted pair or three [3] conductor shielded cable) minimum

Dimensions: 12.75" (32.4 cm) wide, 7" (17.8 cm) deep

Mounting: TC2100 Central Switching Exchange or
TC2105 SLC Expander Chassis

Shipping Weight: 1.0 lbs. (0.5 kg)

Associated Equipment: TC2100—Central Switching Exchange
TC2105—SLC Expander Chassis
TC2120—Relay Line Card
CRT4—Staff Telephone
TC4312—Single Line Telephone

NOTE: THE TC2114 AND TC2113 STATION LINE CARDS MAY NOT BE MIXED IN A SINGLE SYSTEM.

DESCRIPTION

The TC2114 Station Line Card - Four (4) Conductor (SLC4) provides termination and switching for sixteen (16) room stations in a Telecenter® System 21 communications system. Each station can consist of; a speaker, call switches (Normal, Emergency, Privacy), and audio program select in any combination, and a staff telephone (dialing or non-dialing).

If multi-channel audio is required, the TC2120 Relay Line Card may be added. The TC2120 expands the audio channel capacity of the card from one to three.

The TC2114 includes two (2) 25-pair Telco connectors for all field wiring. These are designed for use with standard telephone punch blocks on distribution frames. Conveniently located on the rear of the card, the connectors allow for easy removal and insertion of the module for inspection and servicing.

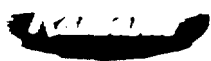
The TC2114 mounts in vertical slots in the TC2100 Central Switching Exchange or in the TC2105 SLC Expander Chassis. Up to five (5) TC2114's may be mounted in the TC2100. An additional eleven (11) TC2114's may be mounted in the TC2105.

Specifications subject to change without notice.

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FEATURES

- Provides Four Telephone Ports
- Accommodates Administrative Telephones, C.O. Trunk Cards, or Tie Line Cards
- Provides Access to Sixteen Global Telephone Links
- Provides 12V or 48V Service
- Modular Plug-In Card for Easy Removal and Service
- Transformer Isolated Circuits
- Balanced Two-Wire Transmission
- Accommodates Any Standard Single Line or Feature Telephone

SPECIFICATIONS

Capacity: Four (4) telephone ports; ports may be configured as any combination of Administrative Telephone Line ports, or with appropriate hardware, C.O. Trunk Ports or Tie Line Ports (two-wire audio/E & M signaling)

On-Hook Voltage: 12V DC, standard
48V DC (with optional power supply)

Loop Current: 12V DC lines - 30 mA typical
48V DC lines - 40 mA typical

Ring Voltage: 90V DC

Ring Current: 10 mA

Dimensions: 2.25" (5.7 cm) wide, 6.25" (15.9 cm) deep

Mounting: Mounts directly on SAC card of TC2100 Central Switching Exchange

Shipping Weight: 0.25 lbs. (0.1 kg)

Associated Equipment: TC2100 Central Switching Exchange
TC2148 48V DC Power Supply
TC4180 Series Trunk Interface Equipment

DESCRIPTION

The Rauland TC2150 Master Station Module provides for four (4) generic telephone ports in Telecenter® System 21 communications systems. The generic telephone ports may be configured for use as Administrative Telephones, for direct connection to an EKSU or PABX trunk port, for connection via an E & M Tie Line Card to a separate telephone system, or for connection via a trunk card to a central office trunk line. The basic TC2100 Central Switching Exchange is equipped with a single TC2150 standard. Up to two (2) additional modules may be added to the system providing a maximum capacity of up to twelve (12) standard telephone ports.

The TC2150 directly accommodates the connection of standard DTMF dialing telephone instruments to the system. The TC2150 provides all sensing, switching and logic for the connection of each of its telephones to any of the Telecenter System 21's sixteen

(16) globally available telephone links. The TC2150 provides 12V DC on-hook voltage standard. 48V DC on-hook voltage may be provided using an optional power supply. The TC2150 provides standard 90V AC ring signal and two-wire balanced audio transmission.

Using an E & M Tie Line Card, the TC2150 can support standard E & M signaling (two-wire audio/Type I, II, III and V signaling).

Using a Trunk Card, the TC2150 permits the connection of the Telecenter System 21 directly to the Public Switched Telephone Network.

The TC2150's mount directly on the SAC Card of the TC2100 Central Switching Exchange. Connections to field devices are via a standard 25-pair Telco connector located on the rear of the SAC Card. The TC2150 is completely modular to permit easy removal and insertion of the module for inspection and servicing.

Specifications subject to change without notice.

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FEATURES

- 12 Watt, 25V RMS Amplifier
- Built-In Peak Limiter
- Automatic Voice Controlled Switching
- Complete Control and Adjustment of Switching
- Built-In Tones

SPECIFICATIONS

Power Required: 12V DC @ 2.0 amps (at RPO)

Rated Power Output: 12 watts @ 25V rms

Frequency Response: 350 Hz to 3.5 KHz
(shaped for maximum
voice frequency
intelligibility)

Noise Levels: -80dB down ref RPO

Limiter Attack/Release Time: <1 m/sec

Input Sensitivity (Talk): 0.25V RMS for RPO

Controls: Listen Volume Adjust
Talk Volume Adjust
Tone Volume Adjust
VOX Sensitivity
VOX Dwell Time
Simplex (PTT) Override of VOX
Supervisory Tone Defeat
Pre-Announce Tone Defeat

Tone Signals: Pre-Announce Tone. Signals
connection to a speaker

Supervisory Tone. Repeats
automatically every 12 seconds
while system is in "Listen" mode

Terminations: All terminations are via modular
connector

Dimensions: 6" (15.2 cm) wide, 11" (28.0 cm)
deep, 2.7" (5.1 cm) high

Shipping Weight: 1.0 lbs. (0.45 kg)

Associated Equipment: Telecenter® IV
Telecenter V
Telecenter TCS
Telecenter 1100
Telecenter System 21
Communications
Systems
ChronoCom™

DESCRIPTION

The Rauland TC2161 is a bi-directional Intercom Amplifier which provides for amplified voice communications between a telephone and a remote speaker or speakers.

The TC2161 incorporates voice-controlled (VOX) switching for hands-free communications. Complete control of the switching circuitry permits the installer to adapt the amplifier to any acoustical environment. The TC2161 provides a full twelve (12) watt, 25V rms balanced output amplifier. A transformer-balanced input and built-in pre-amplifier provide for reliable, noise-free operation. A built-in limiter circuit prevents overload of the signal path. Frequency response in

both the talk and listen mode is shaped for maximum intelligibility for voice communications.

The TC2161 provides an automatic pre-announce tone over any loudspeaker station selected for communications, to alert the station to the call and to prevent unauthorized monitoring. The unit can also sound a repeating supervisory tone every 12 seconds while the system is in the "listen" mode to alert the loudspeaker stations they are being monitored.

All wiring to the TC2161 is via a single, modular connector conveniently located on the rear of the card to provide for easy removal and insertion of the module for inspection and servicing.

Specifications subject to change without notice.

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Chelmsford Public Schools

Administrative Offices

RICHARD MOSER, PH.D.
SUPERINTENDENT OF SCHOOLS

ROBERT CRUICKSHANK
BUSINESS MANAGER

KAREN MAZZA, ED.D.
ASST. SUPERINTENDENT OF SCHOOLS
CURRICULUM AND INSTRUCTION

July 12, 1999

BERNARD DINATALE
EXECUTIVE DIRECTOR OF INFORMATION
AND TECHNOLOGY

MEMO TO: SLC

FROM: Bernard DiNatale

RE: **Form 471 Application Number 121771 - Seven Buildings**
Form 472 Application Number 122372 - Center School

This memo is to inform the SLC the contract for the new telephone system installation for the Center School and the other seven (7) buildings was with a company called The CO/OP, 135 Beaver Street, Waltham, MA 02154, in partnership with **Signet Electronics Systems, Inc.** The Chelmsford Public Schools entered into an agreement with The CO/OP after the allowable contract date for Form 471.

We have received a letter from The CO/OP stating that they would not continue to do business after June 30, 1999, and were transferring the Signet Electronics partnership to **Merrimack Education Center, 101 Mill Road, Chelmsford, MA 01824.** Both Merrimack Education Center and The CO/OP are state approved vendors. **The SPIN for Merrimack Education Center is 143004624.**

Attached is a copy of a letter from The CO/OP.

If you have any questions, please contact me at (978) 251-5100, ext. 28.